

Trickum Road Bridge (Trickum Bridge) (Shelton's Road Bridge)  
Spanning Heaths Creek, west of U.S. Highway 65 at Route BB  
Longwood vicinity  
Pettis County  
Missouri

HAER No. MO-64

HAER  
MO,  
80-LOWO.V,  
1-

**PHOTOGRAPHS**

**WRITTEN HISTORICAL AND DESCRIPTIVE DATA**

Historic American Engineering Record  
Rocky Mountain Regional Office  
National Park Service  
U.S. Department of the Interior  
P.O. Box 25287  
Denver, Colorado 80225

HISTORIC AMERICAN ENGINEERING RECORD

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Trickum Road Bridge  
(Trickum Bridge) (Shelton's Ford Bridge)

HAER No. MO-~~28~~ 64

Location: Spanning Heaths Creek, west of U.S. Highway 65 at Route BB,  
Longwood vicinity, Pettis County, Missouri

UTM: 15.481380E/430596N  
Quad: Longwood

Date of Construction: 1884-1885

Builder: King Bridge Company of Cleveland, Ohio

Present Owner: Pettis County Court  
County Courthouse  
Sedalia, Missouri

Present Use: Vehicular bridge (with a load limit of three tons or less).  
Because his load limit is inadequate for school buses and heavy farm equipment, the structure is to be replaced with a three-span, prestressed concrete bridge in 1990.

Significance: Built during the winter of 1884-1885, the Trickum Road Bridge is one of the oldest surviving metal Pratt through-truss bridges in Missouri. In addition to its architectural significance, the Trickum Road Bridge is important because its builder was the King Bridge Company of Cleveland, Ohio. Few examples of this historic fabricator's work remain in Missouri. The State Historic Preservation Officer has found the Trickum Road Bridge potentially eligible for listing in the National Register of Historic Places.

Historian: Roger Maserang  
Show-Me Regional Planning Commission  
June 1990

## I. HISTORY

The Trickum Bridge (now called the Trickum Road Bridge) was a relatively minor fabrication by a major builder when it erected over Heath Bridge during the winter of 1884-1885. It was one of four metal bridges constructed in Pettis County during this two-year period by the historically significant King Bridge Company of Cleveland, Ohio. The Trickum Bridge, a medium-length Pratt through truss type with some unique touches, is significant today mainly because of its age and because it was built by King.

By the 1880s, Pettis County's four major rail routes had been completed, but most roads were still dirt. There were bridges at most important stream crossings but, in between, many streams had to be forded which meant that heavy rainfall and high water greatly restricted travel. The Pettis County Court responded by commissioning numerous bridges during this and subsequent decades. During the 1880s, most were built of timber by local contractors for amounts under \$500. By comparison, the county paid \$7,575 for the four metal King-built bridges and \$5,470 for two additional metal bridges from the Missouri Valley Bridge & Iron Company. [1] Apparently, these six were the only metal bridges erected in the county in 1884-1885.

Within this context, the Trickum Bridge was a harbinger of the extensive metal bridge construction, which would occur throughout Pettis and other rural Missouri counties as the advantages of steel construction became apparent. Typically, metal truss bridges were fabricated at central locations and shipped to their construction sites, so that, theoretically, the same type of bridge could be built more or less simultaneously in several states. In reality, the variations from bridge to bridge were often enormous.

The Trickum Bridge was identified as a King-built bridge with a semi-intact cast iron nameplate shaped like a Spanish parapet. With the lower left portion missing, it said:

1884  
KING  
BRIDGE  
Co.  
(CLEVE)LAND  
(O.)

The Trickum Bridge was erected at a ford near a crossroads on the most direct route between Sedalia and Marshall, the county seats of Pettis and Saline counties (see 1876, 1896 and 1916 vicinity maps on page 8). In ca. 1920, during a period of highway construction, the Trickum Bridge was moved downstream, approximately 0.2 mile to its present location on Trickum Road. [2] Today, U.S. Highway 65 generally follows the old route (the County Seat Road), but veers eastward in the vicinity of Heaths Creek. The section of the County Seat Road with the original cross has been eliminated and is no longer visible on the landscape. At the time of the bridge's construction, the original site apparently was known as Shelton's Ford.

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County records show that on December 8, 1884, contracts for two "iron" bridges were awarded to the King & Twiss Bridge Company.\* One bridge was to span the south fork of the Blackwater River at Higgins' Ford. The other was for Shelton's Ford on Heaths Creek. [3] In 1885, contracts for two other metal truss bridges were awarded to King, across Heaths Creek, north of Longwood, and spanning Spring Fork in southern Pettis County. [4] Although the location of Shelton's Ford could not be established, the subject bridge could not be any of the other three metal King bridges and consequently is presumed to be the Shelton's Ford bridge. When it became known as the Trickum Bridge was not determined, but it was probably before 1900. An existing bridge has been tentatively identified as the King-built bridge across Heaths Creek, north of Longwood. The other two King bridges from this period are no longer extant.

Metal bridge contractors generally were expected to complete their work within 90 days, and the King Bridge Company probably met whatever deadline was set. On May 9, 1885, five months after the contract was let, bridge commissioner J. C. Johnson reported that he had inspected the bridges at Higgins' Ford and at Shelton's Ford, and found them completed according to specifications. Consequently, the Pettis County Court ordered that a warrant be issued to the King Bridge Company for \$4,010.73, the county already having paid freight charges of \$174.27. [5] Later in May, the court paid William Russell \$620 "for grading and making the approaches" to the bridge at Shelton's Ford and a metal bridge across the Muddy River south of La Monte (one of the two bridges built by the Missouri Valley Bridge & Iron Company). [6]

Although the northeast part of what became Pettis County (the area drained by Heaths Creek) was settled first, most of the population growth was farther south where Sedalia flourished. The Trickum Bridge was built near a crossroads in an area of scattered farmhouses, about three miles west of Longwood (see 1876, 1896 and 1916 vicinity maps on page 8). At about the time the bridge was built, Longwood had several stores and a population of 125. [7] The Oak Grove School would soon be built approximately one mile southeast of the bridge, and the Farmer's School already existed a couple of miles to the west. A general store, called the Trickum Store, either existed on the east side of the County Seat Road or would soon be built. [8] Bypassed by railroads and major highways, Longwood faded, but the village (unincorporated) retains its identity today. The Trickum Store and both schools are gone. The area is somewhat more sparsely populated than when the Trickum Bridge was built, although thousands of motorists on U.S. Highway 65 drive through it daily.

While the Trickum Bridge was being planned and constructed, the Pettis County Court was deeply concerned with the construction of a large new courthouse in Sedalia. This imposing limestone and marble, French Renaissance-style building was gutted by fire in 1920, approximately the same year that the Trickum Bridge was relocated. On December 9, 1884, the day after the Trickum Bridge contract was let, the Washington Monument was officially completed with the installation of the capstone. The Brooklyn Bridge was already one year old.

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\* In its various entries, the court record refers to the King Bridge Company as "King & Twiss Bridge Co.," "King Bridge Co.," and "King Bridge and Iron Co." Except for the December 8, 1884, entry, there were no other references to "King & Twiss" during 1884-1885.

## II. THE BRIDGE

### A. Description

The Trickum Bridge is an 80-foot-long, pinned single span steel Pratt through truss bridge with wrought iron lateral and counter bracing. While not ornate in the fullest sense, it nonetheless has more decorative elements than many Pratts subsequently built across the rivers and streams of Pettis County. Most noticeable is the delicate but functional latticework connecting paired channel sections and highlighting the portals. Other decorative elements include cast iron bracing connectors and the builder's Victorian-styled nameplate which, unfortunately, has been removed.

Other dimensions of this five-panel bridge include a width of approximately 18 feet, with a roadbed of 16 feet. Vertical clearance is approximately 13 feet. Abutments are circular steel pipes filled with concrete. There are no approach spans. The deck is wood. Considering its age, the Trickum Bridge is structurally sound and reasonably well-preserved for a span designed for relatively light, narrow vehicles, such as a team and wagon. The posted three-ton weight limit allows use of cars and pickup trucks, but rules out school buses and heavy farm machinery.

The Trickum Bridge's end posts, vertical members and top chords are paired sections of channel steel laced together with steel ties. Portal bracing is latticed (see HAER Photograph No. MO-64-2). Where lateral bracing intersects (three points on top and in the central side panels), decorative cast iron connectors are bolted in place (see HAER Photograph No. MO-64-7). Floor beams are fashioned from channel steel sections and plates (see HAER No. MO-64-5). Connections are pinned, typical for metal bridges of the period. Overall, the lacing and latticework, in particular, suggest delicacy.

In the superstructure, the largest channel sections (2" x 7") are found in the end posts and top chords. The space between the paired channels is 10 inches. Diagonal lacing consists of 1-1/4" x 13" steel strips. Vertical members are similarly laced, but the channel sections are smaller (1-1/2" x 4") and more closely spaced. Lateral bracing consists of 7/8" diameter round and 1/2" x 1-3/4" flat lengths of wrought iron. Side railings are 1-1/2" x 3" channel sections. Bracing connectors are 5-1/2" in diameter. Each of the five panels is approximately 15 feet wide.

### B. Location

Within a typical rural setting the Trickum Bridge crosses Heaths Creek on Trickum Road, approximately three miles west of Longwood in Pettis County, Missouri. Heaths Creek is a tributary of the Lamine and Blackwater rivers. The bridge is on or just south of the line between Sections 27 and 34 of Township 48 North, Range 21 West. UTM coordinates as determined from the U.S.G.S. Longwood quadrangle, 7.5 minute series, are 15.481.380 easting, 15.4306.960 northing. The west edge of U.S. Highway 65 is approximately 120 yards east of the east end of Trickum Bridge, at the intersection of Route BB. Prior to ca. 1920, the Trickum Bridge was approximately 0.2 mile north of its present location.

### C. Modifications and Maintenance

Surface corrosion notwithstanding, the Trickum Bridge is in relatively good condition. The side rails are somewhat wavy but intact. The abutments (concrete-filled pipe) were probably installed in ca.

1920, when the bridge was relocated from its place on the old County Seat Road and installed on Trickum Road. The present wooden deck was installed in the late 1950s. No repairs or modifications of significance have been made since then. Whether steel members were replaced earlier than this is unknown. Some channel sections are marked, PASSAIC R. M. CO. PATERSON, N. J.

#### D. Significance

The State Historic Preservation Officer (SHPO) for Missouri has determined the Trickum Bridge to be potentially eligible for listing in the National Register of Historic Places under Criterion C, as one of the earliest surviving Pratt through truss in the state. Constructed in 1884-1885, it is one of Missouri's few remaining examples of a bridge built by the historically significant King Bridge Company of Cleveland, Ohio, a prolific fabricator of metal bridges throughout their golden age and into the twentieth century. In terms of design features, the steel and wrought iron Trickum Bridge is noteworthy for its extensive steel lattice work, wrought iron lateral and counter bracing with decorative cast iron connectors, and unusual floor beams. [9]

As the SHPO's opinion concludes, the Trickum Bridge possesses "characteristics...associated with some early steel truss bridges in the Midwest which were phased out by the turn of the century and have since become unique through normal bridge attrition." [10]

The Trickum Bridge is an early steel example from a transitional era of bridge building in the U.S., the 1880-1899 period dominated by the versatile, almost infinitely varied Pratt truss. As engineer-historian J. A. L. Waddell noted, the Pratt was the most common American truss type for spans under 250 feet, with advantages in simplicity as well as economy. [11] At 80 feet from end to end, the Trickum Bridge is a relatively small example of a medium-sized Pratt. When it was built, timber bridges were still the norm, and metal bridges of any type were relatively uncommon in Pettis County.

The Trickum Bridge is the oldest bridge inventoried in an architectural field survey in rural Pettis County and the only county bridge still sporting (in 1988, before its removal) a King Bridge Company nameplate. [12] Although another bridge across Heaths Creek has been tentatively identified as a King-built bridge, it is not quite as old (1885) and is less ornate.

The fact that the Trickum Bridge is not at its original site is mitigated by its architectural value, the relatively short distance (approximately 0.2 mile) between the old and new locations and the amount of time (approximately 70 years) that has elapsed since the bridge was moved.

#### E. Replacement and the Future of Trickum Bridge

Because Trickum Bridge lacks the capacity for heavy loads, it is scheduled for replacement later this year. The proposed new bridge is a \$200,000 three-span, prestressed reinforced concrete high girder type. Its dimensions include a length of 120 feet (40 feet longer than Trickum) and width of 24 feet (eight feet wider than Trickum). Heaths Creek will be crossed at the site of the present Trickum Bridge.

As required by law, the Trickum Bridge has been advertised as available at no cost for adaptive reuse, in accordance with the Secretary of the Interior's Standards for Rehabilitation and Guidelines for

Rehabilitating Historic Bridges. The bridge advertisements are in the May 1990 issue of Preservation News and the Spring 1990 issue of the Missouri Transportation Bulletin.

#### IV. BIOGRAPHICAL MATERIAL

##### A. King Iron Bridge Company

When the Trickum Bridge was erected in the winter of 1884-1885, the King Bridge Company of Cleveland, Ohio, apparently was at the zenith of its half-century of inspired bridge building. The company not only made significant technological contributions to bridge engineering, but was among the nation's largest bridge manufacturers and builders. Indeed, the company claimed the nation's largest bridge works in the very year the Trickum Bridge was commissioned by Pettis County in 1884. [13]

The Trickum Bridge, a basic Pratt through truss type, was a far cry from the bowstring truss, tubular arch design that made the company's reputation as an innovator. Founder Zenas King patented his relatively cheap, relatively lightweight, tubular arch bridge in 1861, then went on to manufacture and install it and many other truss designs including the older Pratt truss which had been patented by Thomas and Caleb Pratt in 1844. [14] Bridge building was highly competitive during the time of the Pratt, but the King Bridge Company was the successful bidder on thousands of spans nationwide until its demise in 1911. [15]

Despite the great number of King bridges, normal attrition plus an accelerated replacement program in recent years has taken a heavy toll. Since most nameplates have been vandalized and county records often refer to fords and other landmarks which cannot be readily traced, it is impossible to say how many King-built bridges are extant. But the Trickum Bridge is believed to be one of the few examples of this enterprising company's work remaining in Missouri.

#### V. FOOTNOTES

- [1] Pettis County Court Records, Book 9, pp. 177, 210, 295.
- [2] Interview with Cecil C. O'Rear, June 1990. The O'Rear family has owned land around the Trickum Bridge throughout much of the bridge's history.
- [3] Pettis County Court Records, Book 9, p. 210; The Sedalia Daily Democrat, December 9, 1884.
- [4] Pettis County Court Records, Book 9, p. 295.
- [5] *Ibid.*, pp. 269-270.
- [6] *Ibid.*, p. 271.
- [7] Missouri Historical Company, The History of Pettis County, pp. 840-841.

- [8] Interview with Cecil C. O'Rear, June 1990. In addition to owning land around the bridge, the O'Rears were among operators of the Trickum Store.
- [9] Statement of the Opinion of the State Historic Preservation Officer, November 16, 1985.
- [10] Ibid.
- [11] Waddell, J. A. L., Bridge Engineering, V. I, p. 468.
- [12] In 1988, an inventory of 23 older metal highway bridges was compiled by Show-Me Regional Planning Commission as part of an architectural survey of rural Pettis County. Only eight of the bridges were described as Pratt through truss. The Trickum Bridge was the oldest identified bridge built by the King Bridge Company, although a less ornate bridge northwest of Longwood has been tentatively identified as King-built. The oldest bridge found in adjacent Johnson and Lafayette counties was built in 1886, by another fabricator.
- [13] Ohio Department of Transportation, The Ohio Historic Bridge Inventory, Evaluation and Preservation Plan, p. 223.
- [14] Condit, Carl W. American Building, p. 96.
- [15] Simmons, David, "Bridge Preservation in Ohio," Ohio Cities and Villages, August 1978, p. 16.

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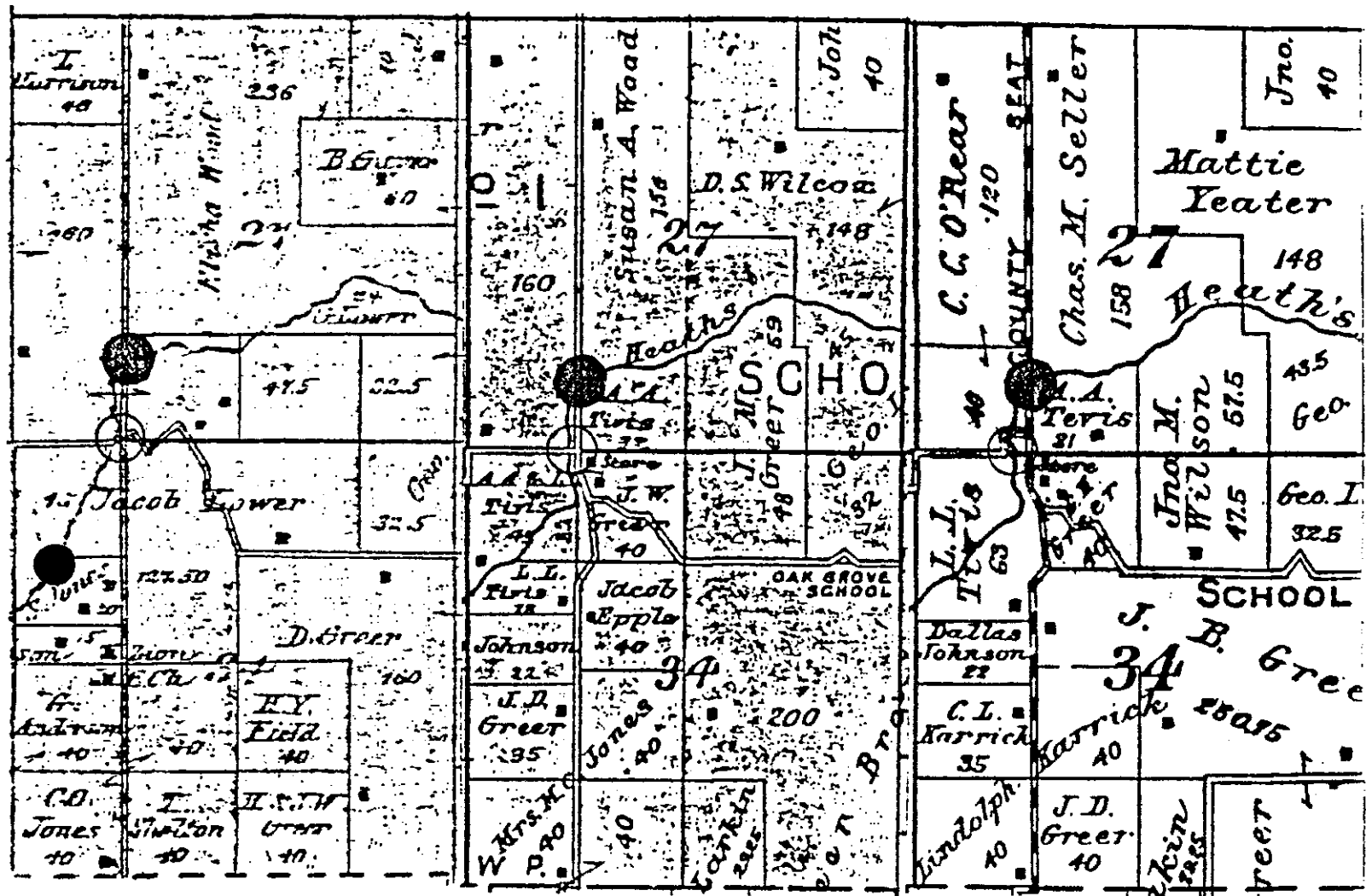
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TRICKUM BRIDGE VICINITY AS DEPICTED ON 1876, 1896 AND 1916 PETTIS COUNTY  
PLAT MAPS



1876

1896

1916

Legend:



Original site of Trickum Bridge (1884-ca. 1920)



Present site of Trickum Bridge (ca. 1920-1990)